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RECENT LITERATURE.

'The Game Birds of California.'— One of the most notable of recent American bird books is the handsome work on 'The Game Birds of California'¹ by Grinnell, Bryant and Storer issued by the University of California, as one of its Semicentennial publications. The life histories of game birds have never been so well studied and written up as those of certain other species, because those who have had the best opportunities have been more interested in killing the birds than in studying them. We may search the columns of the sporting journals and while we find an abundance of information on how to shoot game birds, how they act in reference to the gunner, and what fine times the gunner had when shooting them, there is a lamentable lack of careful observation on the life and habits of the birds. State Game Commissions are usually made up of hunters rather than of trained ornithologists and consequently their activities are directed along the same lines and their publications are mainly of the same nature though there are notable exceptions. The supervision of the enforcement of the Migratory Bird Law and the succeeding Treaty with Canada, by a committee of the Biological Survey at Washington, has opened the eyes of the public to the importance of entrusting this sort of work to trained experts and the present volume is an example of a state game publication prepared by just such experts. We have had some similar publications by state or local authorities, notably Mr. E. H. Forbush's admirable 'History of the Game Birds, Wild Fowl and Shore Birds of Massachusetts and Adjacent States,' issued by the Massachusetts State Board of Agriculture, but they are few, and some State Boards unfortunately adopt an attitude of hostility to the Biological Survey and to scientific research, which is unfortunate and deplorable.

The attitude of the University of California, through its Museum of Vertebrate Zoölogy, in turning to practical advantage the information accumulated through the researches of its trained experts is most commendable. We go to the universities for expert information on all sorts of subjects and why not go to their zoölogical departments or to the great museums for information on wild life and its preservation?

Dr. Grinnell and his associates have had the advantage of Mr. Forbush inasmuch as they have been engaged in the personal study of game birds along with their other field work for many years, and consequently have accumulated a vast store of original information, while he was forced to compile a large part of his data in a very short period of time. Their

¹The Game Birds of California. Contributions from the University of California Museum of Vertebrate Zoölogy. By Joseph Grinnell, Harold Child Bryant and Tracy Irwin Storer. University of California Press, Berkeley, 1918. Large 8vo., pp. i-x + 1-642, 16 colored plates and 94 text figures. Price cloth \$6.00 net.

report is therefore an advance over his and is undoubtedly the best work on game birds that has yet appeared in America.

The preliminary chapters treat of the decrease of game, natural enemies of game, gun clubs, introduction of non-native game, game propagation and legislation. From these we learn that the serious decrease in game birds, especially the waterfowl, in California, was first noticed about 1880, since which time it has increased at an alarming rate. In the Fresno region in 1912 flocks of geese were still to be seen in certain sections but ten to twenty years earlier the whole San Joaquin Valley literally swarmed with wild geese during midwinter. "From the windows of a moving train myriads of geese were to be observed, reaching as far as the eye could see on either side of the railroad from Fresno to Stockton — certainly a thousand fold more geese than can be seen today along the same route." The number of ducks sold in the markets of San Francisco according to careful estimates has decreased from 350,000 in 1911-12 to 125,000 in 1915-16. These are but a couple of illustrations from the many facts collected by the authors of this work. Their conclusions are set forth as follows: "The causes of this decrease are many and diverse but all are due in last analysis to the settlement of the state by the white man. Some of these factors, such as excessive hunting and sale of game, are subject to control; but others such as reclamation of land, and overhead wires are inevitable. . . . The game supply of the future must rely upon correct inductions based upon careful study of the entire problem, and final adoption of those means which it is found feasible to employ."

What will be the eventual outcome of the game situation it is hard to foretell. Certainly in our Eastern States the outlook is not encouraging. With the constant decrease in wild land and the issuing of innumerable hunters' licenses, 295,000 in Pennsylvania last year, the native-bred game will surely disappear — indeed even now Quail have to be imported and many states restocked. When the same conditions prevail in the states from which Quail are now obtainable the species will be practically extinct. And so with the game that comes to us from breeding grounds far to the north. When these grounds are all reclaimed the supply will end and in future we shall be dependent upon game propagated especially for liberation on the shooting grounds, as is the case in England.

It is well worth while to have this matter placed before us in all its seriousness as has been done in the present volume, so that the public may realize with what sort of a problem they have to deal and see the necessity of securing expert advice.

In speaking of gun clubs the authors give due credit to the importance of the preserves which they establish and the care that is taken to limit shooting days and stop illegal gunning on the grounds. At the same time they point out that the preserves prove so attractive to the birds that practically all individuals normally scattered over large areas are congregated there, where they are exposed to regular slaughter by the most skilful shots and the ultimate destruction is probably hastened. As to the introduc-

tion of non-native species the author's verdict is strongly opposed to the practice. They rightly assert that the native species are better adapted to our country and it is our duty to use all our efforts toward their conservation.

The systematic account of the various species naturally occupies most of the text and is admirably done. Under each heading come paragraphs on: other names; description; marks for field identification; voice; nest; eggs; general distribution; and distribution in California. Then follows in larger type a general account of the habits and history of the species and its relative importance as a game bird. The birds included are the Geese, Ducks and Swan; Spoonbill and Ibises; Cranes, Rail, Gallinules and Coots; Shorebirds; Quail and Grouse; Pigeons and Doves, 108 species in all. The technical nomenclature follows the A. O. U. 'Check-List' and so do the vernacular names except where they are not in accord with Californian usage. This is perfectly proper in a work of this kind especially as the other names are usually mentioned as well. It is rather amusing however to the eastern ornithologist to read of the Mud-hen "known in booklore as the Coot." The authors would find that along the Atlantic Coast "Mud-hen" means the Clapper Rail while "Coot" is by no means a book name in the Eastern States. A little further information on this point might save some of their readers no little trouble, especially as they refer in one place to the "Mud Hen in the east, meaning the Coot." Twelve of the colored plates are by Fuertes and represent that artist at his best while four are by Major Allan Brooks. They form a valuable addition to the published portraits of American birds and add materially to the attractiveness of this well printed volume.

This work will prove of great importance to many different classes of readers: the sportsman will learn more about the game birds of the state than can be found in any other volume and will find the important recognition characters of each species clearly set forth; the bird student, be he amateur or professional, will find it an invaluable work of reference and the conservationist will find in it the facts and suggestions for which he has been seeking. The bibliographies will also prove of the greatest help to those who wish to carry their studies farther and to consult the other works on the subject.

It is encouraging to know that one of the authors of this work, Dr. Bryant, was called, before his task was completed, to fill an important position in the California Fish and Game Commission, and we wish that all the State Game Commissions might be induced to seek men of this type to carry on their activities — surely that is a most important point in game conservation.— W. S.

Mathews' 'The Birds of Australia.'—Part IV of Vol. VII of Mr. Mathews' great work¹ brings us almost to the end of the Cuckoos, only a

¹ *The Birds of Australia.* By Gregory M. Mathews. Vol. VII, Part IV, December 19, 1918, pp. 321-384.